

## ABSTRACT

A method and architecture optimizes transaction ordering in a hierarchical bridge environment. A parent-bridge is one level above a child-bridge, which in turn is one level above a grand-child component. The parent-bridge is a bridge-bridge. The child-bridge can be a bus-bridge or a bridge-bridge. The grand-child component can be a bus, a bus-bridge or a bridge-bridge. A parent-bridge is connected to a child-bridge via child-links, the child-bridge connected to grandchild-links, and the parent-bridge having multiple transaction order queues (TOQs) per child-link. Ideally, the parent-bridge has one TOQ for each grandchild-link where the parent-bridge applies separate transaction ordering for each of the grandchild-links. However, at a minimum, the system uses at least two TOQs per child-link, and as such, provides a higher level of transaction throughput than systems using one TOQ per child-link. The child-bridge sends a signal to the parent-bridge identifying from which grandchild-link a transaction was sent.